Natural history of pain following unicompartmental knee replacement

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Introduction

- Medial unicompartmental knee replacement (UKR) is an alternative to total knee replacement (TKR).
  - Advantages include better functional outcome and fewer complications
  - However, UKR has a higher revision rate
  - Revisions are often attributed to unexplained pain.
  - It is believed that unexplained pain improves in the first post-operative year.
  - This has not been demonstrated in a clinical trial.

Aims

- The aims of this study were:
  - to define the natural history of pain following UKR
  - to determine the factors affecting incidence of, and recovery from, postoperative pain.

Patients and Methods

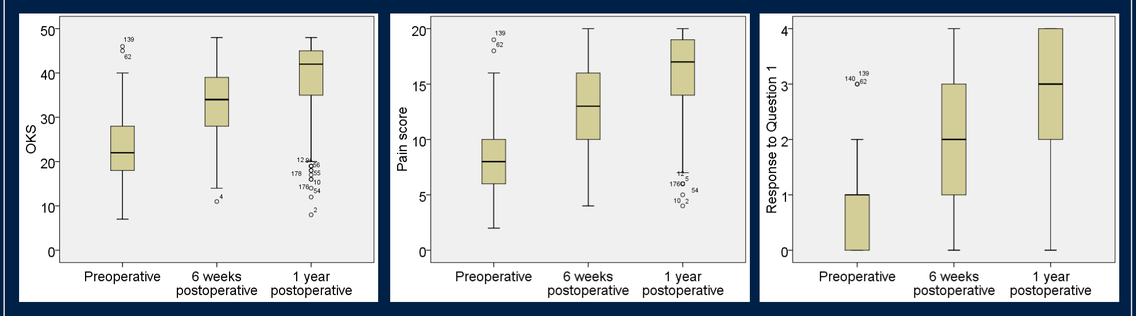
- 183 patients (191 knees)
  - Medial UKR (Oxford UKR, Biomet, Bridgend UK)
  - Mean age 65.2 years (36.6-86.5)
  - 52% female
- Patients were assessed with Oxford Knee Score (OKS):
  - Preoperative
  - Six weeks postoperatively
  - One year postoperatively
- Patient factors were also recorded:
  - Age and Gender
  - Body Mass Index (BMI), in WHO categories
  - Surgeon grade – registrar, fellow or consultant

Statistical Analysis

- Patients were categorised according to the presence or absence of pain at 6 weeks and 1 year postoperatively.
- Pain was classified as 'unexplained' when no other cause was found (eg infection, trauma)
- Outcome measures:
  - OKS (absolute and change)
  - Pain score (OKS Questions 1, 4, 5, 8, and 9).
  - General pain question (Q1 of OKS)
    - 'How much pain do you have from your knee?'
- Analysis:
  - ANOVA for OKS and pain score
  - Friedman test for OKS q1
  - Pearson correlation co-efficient for age, BMI
  - Chi squared test for incidence of pain in different subgroups
  - SPSS v20 used
  - significance set at $P < 0.05$

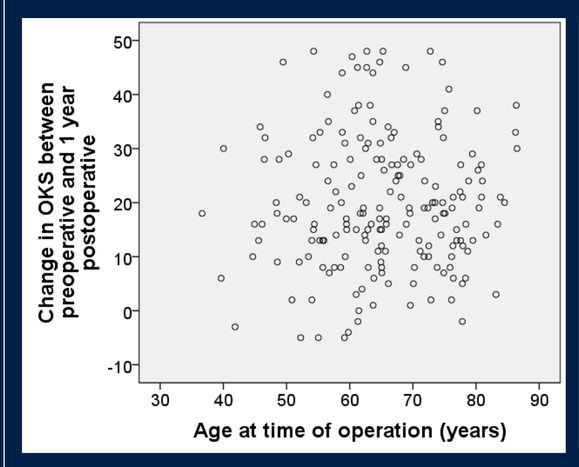
Results

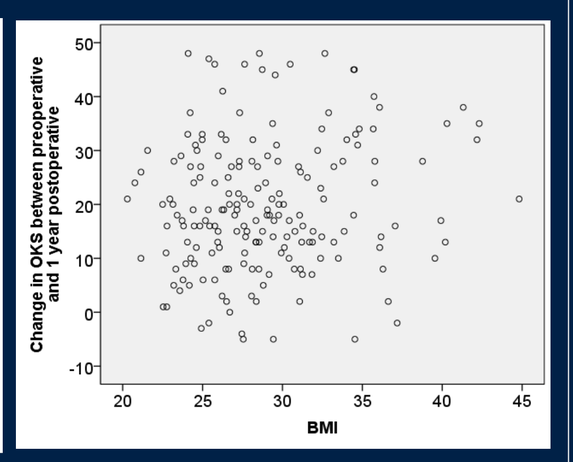
- Good outcomes overall



- At 6 weeks,
  - Severe pain in 7/191 knees (3.7%)
  - Moderate pain in 51/191 (27.2%).
- At one year:
  - Severe pain in 6/191 (3.1%)
  - Moderate pain in 27/191 (14.1%).
- 73/191 (38%) reported pain at either time point
- Pain was unexplained in 56/73 (77%).

- Pain improved between 6 and 52 weeks (one way ANOVA, $P<0.05$ for all comparisons) regardless of whether it was explained or not.
- The incidence of unexplained pain was unaffected by age, BMI or surgeon grade.





- Women were more likely to experience unexplained pain than men (Chi Squared test, p=0.02).

Pain reported at 6 weeks postoperative	Frequency		
	Male	Female	Total
Mild pain or no pain	64	53	117
Severe or moderate pain:	27	47	74
Explained	8	10	18
Unexplained	19	37	56

- Neither age, gender, BMI nor surgeon grade affected the progression of pain beyond 6 weeks.

Conclusions

- Unexplained pain after UKR is likely to improve in the first postoperative year.
- Women are more slightly more likely to experience unexplained pain at 6 weeks.
- Neither age nor BMI affected the incidence of pain.
- Neither age, gender nor BMI affected the progression of this pain beyond 6 weeks.

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